April 23, 1940. C. F. TEFFT 2,198,399

BUILDING BLOCK

Filed July 19, 1939 2 Sheets-Sheet 1

Fig. 2

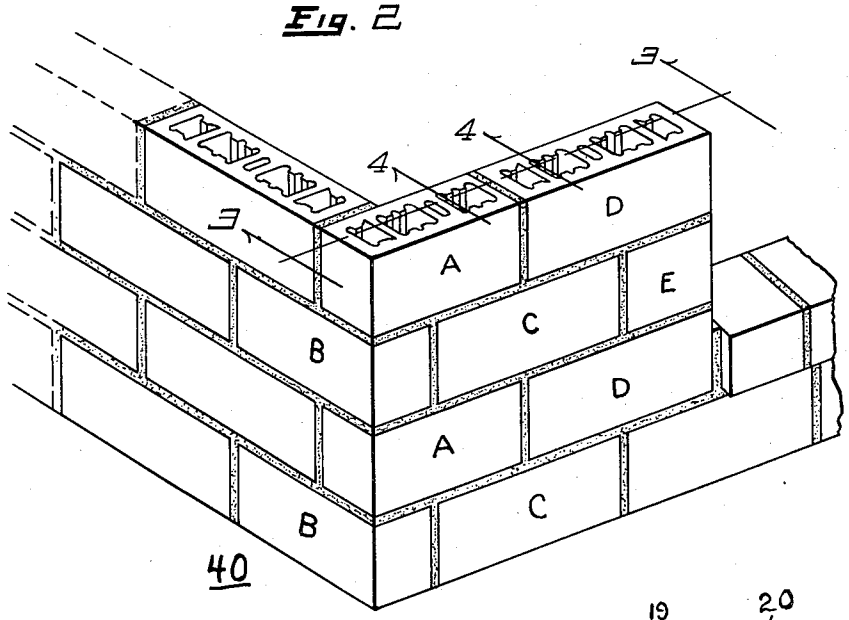
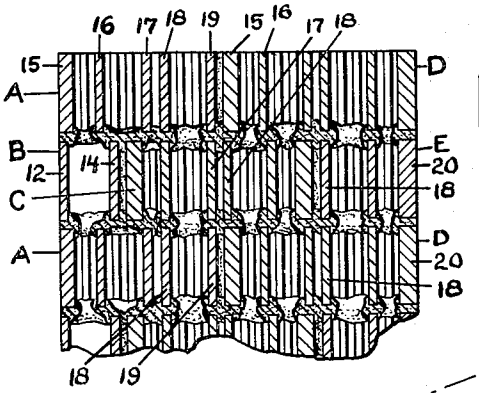


Fig. 3



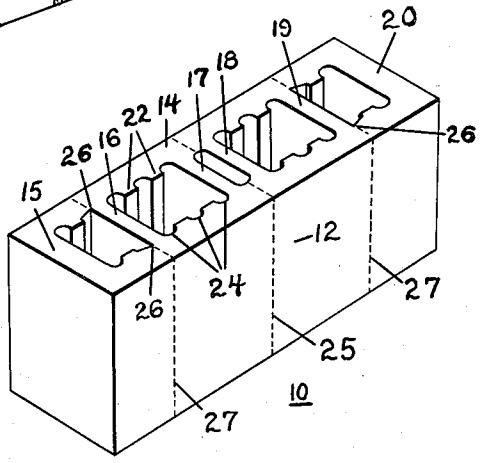


Fig. 1

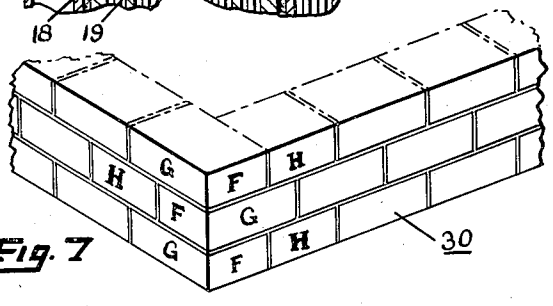


Fig. 7

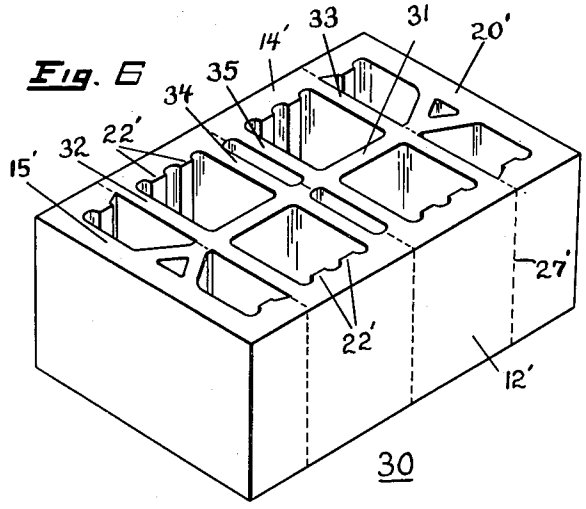
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Filed July 19, 1939 2 Sheets-Sheet 2

Fig. 6



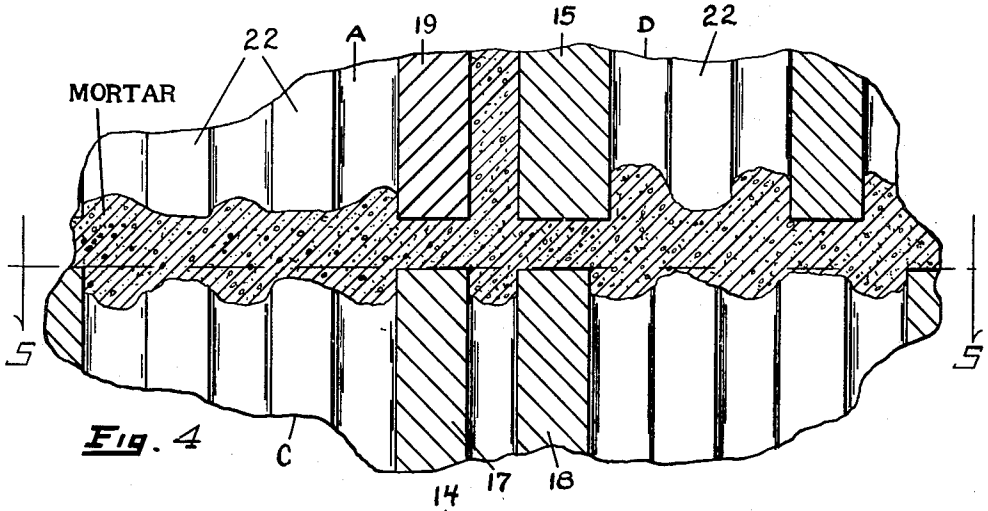


Fig. 4

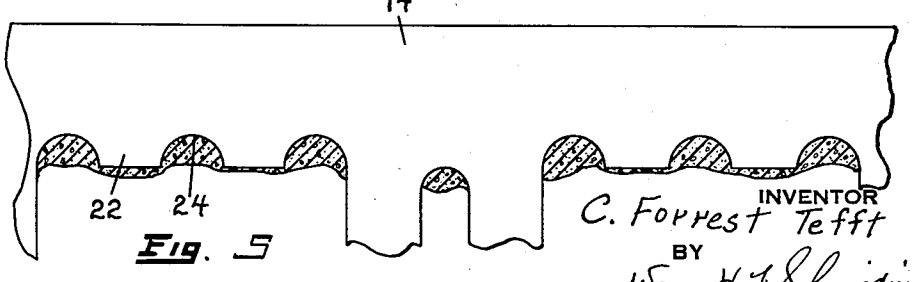


Fig. 5

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UNITED STATES PATENT OFFICE

2,198,399

BUILDING BLOCK

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Application July 19, 1939, Serial No. 285,368

8 Claims. (Cl. 72—41)

The present invention relates to improvements in wall construction.

In the construction of walls for buildings and the like, it is desirable to form the walls of hollow fired clay blocks bonded together with a suitable readily workable mortar so that a light but sturdy wall may be had. The usual cored brick or block is heavier and stronger than is actually needed because the blocks must have thick walls to afford considerable bearing surface for obtaining a strong mortar bond. If the walls are made relatively thin to reduce the weight of the blocks, the bearing surfaces afforded by the ends of the walls will be insufficient to form a strong mortar bond.

It is the object of the present invention to form a hollow fired clay block, the water absorbing characteristic of which is such that moisture of the usual readily workable mortar will be readily absorbed to cause the mortar to set shortly after it is applied to the bearing surface of the block, at least one of the spaced walls having ribs extending from top to bottom to form a plurality of grooves and applying the usual readily workable mortar to the top of the ribbed wall so that it will bridge the ends of the grooves to form a bond extending the width of the wall and the ribs.

Another object of the invention is to form the blocks as set forth in the preceding paragraph, in which two interconnecting webs for the two spaced walls are disposed adjacent the center of the block and are spaced apart the width of a mortar joint and a third web is spaced from the center of the block at a distance equal to the width of the block less one half a mortar joint so that in forming a corner in a wall, two of the blocks may be set at right angles to one another in one course, whereby the side of one full length block may be flush with the end of the other block, and a block of the second course may be broken off at the outside edge of the third mentioned web, so that one end of the block in the second course will be flush with the wall of the block therebelow and the third web will coincide with one of the central webs of the mentioned full length block in the lower course, thus forming a mortar bond at the center of the lower block.

Other and further objects and advantages will be apparent from the following description, reference being had to the accompanying drawings wherein preferred forms of embodiments of the present invention are clearly shown.

In the drawings:

Fig. 1 is a perspective view of a building block;

Fig. 2 is a perspective view of part of a wall formed of blocks similar to that shown in Fig. 1;

Fig. 3 is a fragmentary view taken on line 3—3 of Fig. 2;

Fig. 4 is an enlarged fragmentary view taken on line 4—4 of Fig. 2;

Fig. 5 is a view taken on line 5—5 of Fig. 4; and

Fig. 6 is a perspective view of another form of building block.

Referring to the drawings, a hollow fired clay building block is shown at 10. The block is formed with spaced side walls 12 and 14 that are interconnected by webs 15, 16, 17, 18, 19 and 20. Preferably the webs extend from top to bottom of the walls.

The walls 12 and 14 have ribs 22 formed thereon, which ribs extend from top to bottom of the walls parallel to the webs described above. The ribs 22 form grooves 24 that terminate at the top and bottom end edges of the walls 12 and 14. These ribs 22 are spaced apart a distance such that mortar having the usual working consistency may be bridged across the ends of the grooves 24. The top and bottom ends of the walls including the ribs form bearing surfaces that are adapted to be bonded with adjacent bearing surfaces. It is apparent that the ribs 22 widen the effective bearing surfaces and in addition strengthen the walls. With this construction, the walls of the blocks may be relatively thin to lighten the block without reducing the strength of the block.

The webs 15 and 20 form the end walls of the whole block. The webs 16 and 19 are spaced from the center of the block, represented by the dotted line 25, approximately the width of the block, and the two webs 17 and 18 are disposed adjacent the center of the block and are spaced apart approximately the width of a mortar joint. The grooves 24 on the outside of the webs 16 and 19 are formed with oblique corners 26 adjacent the webs to weaken the walls 12 and 14 so that the block may be readily broken by a suitable tool along the planes indicated by the dotted lines 27.

The blocks are adapted to be formed by extruding soft clay through a die that forms the ribbed walls and interconnecting webs. The extruded clay is then cut into blocks of the desired heighth by the usual cutting device well known in the tile manufacturing art. In forming the blocks 10, the outside walls may be rough or smooth, and in the embodiment shown, the exterior of the block is smooth for providing a smooth finished wall. The clay blocks thus formed are then fired in the usual manner. It is essential that the clay used in forming the blocks be of a soft type so that when the block is finished it will readily absorb moisture from mortar used in bonding the blocks together.

A fire clay has been found to be suitable for forming the blocks 10.

Another form of block is shown at 30 which block may be formed in a manner similar to

that in which the block 10 is formed. The block 30 is approximately twice the width of the block 10 and equal in length and heighth. A longitudinal web 31 is formed lengthwise of the block for strengthening the block. The portions of the web 31 interconnecting the webs 15' and 32, and 33 and 20' are forked to lend additional strength to the block. The walls 12' and 14' are provided with ribs 22' similar to the ribs 22.

A wall 40 is shown constructed in accordance with my invention. The wall 40 is made of blocks 10 laid in a "running" bond, one vertical mortar joint falling directly at the center of blocks in the next upper and lower courses.

In bonding the blocks 10 to form the wall 40, the usually employed readily workable mortar is spread over the top bearing surfaces including the ribs 22, and the webs 17 and 18 of the two adjacent blocks in one course and a block is then placed upon these blocks with one end web of the uppermost block resting over the web 18 of a lower block and the web at the opposite end of the uppermost block resting on the web 17 of a lower block. The upper block thus spans the vertical mortar joint of two adjacent blocks in the next lower course and the ends thereof are supported by webs in the next lower blocks. When the blocks are bonded as described, the mortar will bridge the ends of the grooves 24, as shown in Fig. 5. Thus the effective width of the mortar joint is the width of the walls including the ribs. The mortar extending into the ends of the grooves keys the blocks in position to form a strong bond between the blocks. Moisture in the mortar is readily absorbed by the blocks so that the mortar quickly congeals or sets. This permits the wall to be built up without sliding or shifting of the lower blocks, and prevents separation of the mortar over the ends of the grooves 24.

By spacing of the webs forming the hollow block, as set forth, a single block may be utilized for forming wall corners and establishing the running bond. Assuming for example, the block 10 to be three and three-quarter inches in width, twelve inches long and five inches high, and the mortar joints one-half inch, the webs 17 and 18 are spaced one-quarter inch from the center of the block or one half the width of a mortar joint. The webs 16 and 19 will be spaced three and one-half inches from the center of the block, the width of the block, less one half a mortar joint, or nine and one-half inches from the outer faces of the opposite end webs. The webs 16, 17, 18 and 19 are approximately one-half inch in width. In forming a corner of the wall, the blocks A and B are "clipped" or broken on the line 27 so that these blocks will have an overall length of ten inches with the web 19 forming one end wall. The blocks A are stacked across the blocks B at right angles thereto and along the bearing surface of the full length blocks C. The blocks C are bonded with the side of a block B by a one-half inch mortar joint. The center webs 17 of the blocks C will be ten inches from the outside wall of the blocks B; hence the end webs 19 of blocks A will coincide with the webs 17 of blocks C. The end webs 16 of the full length blocks D, abutting block A, will rest above the center interconnecting webs 18 of blocks C. In this manner, a regular running bond may be readily established from a corner, and the ends of each tile will be vertically aligned with a web of a block in the next lower course. This is illustrated in Fig. 3 wherein the end webs 19 of the clipped blocks A coincide with the center webs 17 of the blocks C and the ends 16 of the blocks D rest upon the central webs 18 of the blocks C.

It is often convenient to use a block one half the length of the blocks used in constructing the wall to form openings in the wall. Two of such blocks may be readily formed by clipping a block 10 at the center thereof on the line 25. The webs 17 and 18 each form an end wall of the half length block. This block is illustrated at E, and the web 18 thereof is aligned with the web 18 of the block D in the next lower course and the end web 20 is aligned with the web 20 of the block D.

Preferably the ribs 22 and 22' extend approximately three eighths of an inch from the walls, are approximately one half inch in width and are spaced apart approximately one half inch.

When the width of the building block is greater than one half the length thereof, it is desirable to dispose an interconnecting, intermediate web close to one end of the block and spaced from the other end thereof so that the distance, from the web to the remote end of the block plus the width of the web and the width of the block, is equal to one and one half the length of the blocks less one half the width of a mortar joint. Thus by breaking or clipping one of the blocks adjacent the described interconnecting or intermediate web, the block may be bonded with the side of a corner block, the end of which corner block forms a header, and one end of the clipped block will lie the width of one half a mortar joint from the center of the second stretcher block from the corner in the next course above to form a regular running bond pattern. When the block is clipped, the intermediate web then functions as an outer end of the block. It is also desirable to provide two intermediate webs adjacent the center of the blocks, each spaced from the center thereof one half the width of a mortar joint to form supporting walls for the end walls of blocks in the next above course. The block 30 embodies the above described features. Assuming for example that the block 30 is eight inches wide and twelve inches in length, the outer face of web 32 should be spaced nine and three-quarter inches from the outer face of end web 20' and the outer face of the web 33 an equal distance from the outer face of the end web 15' so that the block may be readily shortened to a nine and three-quarter inch length by clipping the block adjacent either of the webs 32 or 33.

Referring to Fig. 7, a portion of a wall, including a corner thereof, is illustrated, which wall is made of the blocks 30 to form a regular running bond. The corner of the wall is formed by blocks stacked one on another so that the courses adjacent the corner will be alternately headers and stretchers, indicated at F and G respectively. The headers being eight inches in length (the width of the block) and the stretchers are twelve inches in length. When the blocks form stretcher faces, full length blocks are joined thereto to form a stretcher course along the wall. In order to form stretchers in the courses beginning with a header F at the corner, a block, shown at H, is clipped on the plane indicated at 27' adjacent the web 33 and this shortened block is joined with the header block by the usual mortar joint. Assuming the mortar joints to be one half inch in width, the distance from the outside edge of the corner to the end of the block H will be eighteen and one-quarter inches. It is apparent therefore, that

the web 33 will be aligned with the central web 34 of the next lower block, since the web 33 will be an equal distance from the outside wall of the corner. A full length block forming a stretcher face may then be joined with the block H and have its end wall aligned with the central web 35 of the next lower block. Thus a regular running bond is establishel.

While the forms of embodiment of the present invention as herein disclosed constitute preferred forms, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

I claim:

1. A wall comprising stacked baked clay hollow building blocks, each of said blocks comprising spaced walls and interconnecting webs forming the hollow blocks; spaced ribs on one of said walls extending transversely of the length of the walls to provide a plurality of transversely extending grooves; mortar bonding the confronting bearing surfaces of the blocks; said mortar forming a joint, on the wall having said ribs, equal to at least the width of the wall and the ribs; said mortar when applied having the usual liquid content so as to be readily workable by the brick mason; and said ribs being spaced from one another at such distance and the liquid absorbing characteristic of the block being such that mortar bridges the ends of the grooves when the mortar is applied in the usual manner.

2. A wall comprising stacked baked clay hollow building blocks, each of said blocks comprising spaced walls and interconnecting webs forming the hollow block, two of said webs forming ends of the blocks and another web extending from top to bottom of the walls and spaced from the center of the walls approximately the width of the block less one half the width of a mortar joint; ribs on the inside of one of said walls extending from top to bottom of the wall to provide a plurality of transversely extending grooves; mortar bonding the confronting bearing surfaces of the blocks; said mortar forming a joint, on the wall having said ribs, equal to at least the width of the wall and the ribs, said mortar when applied having the usual liquid content so as to be readily workable by the brick mason; and said ribs being spaced from one another at such distance and the liquid absorbing characteristic of the block being such that mortar bridges the ends of the grooves when the mortar is applied in the usual manner.

3. A wall comprising stacked baked clay hollow building blocks, each of said blocks comprising spaced walls and interconnecting webs extending from top to bottom of the walls forming the hollow block, two of said webs being disposed adjacent the center of the walls and spaced apart the width of a mortar joint; a third web spaced from the center of the block approximately the width of the block less one half the width of a mortar joint; spaced ribs on one of said walls extending from top to bottom thereby to provide a plurality of transversely extending grooves; mortar bonding the confronting bearing surfaces of the blocks; said mortar forming a joint, on the wall having said ribs, equal to at least the width of the wall and the ribs; said mortar when applied having the usual liquid content so as to be readily workable by the brick mason; and said ribs being spaced from one another at such distance and the liquid absorbing characteristic of the block being such that mortar bridges the ends of the grooves when the mortar is applied in the usual manner.

4. A wall comprising stacked baked clay hollow building blocks, each of said blocks comprising spaced walls and interconnecting webs extending from top to bottom of the walls forming the hollow block, two of said webs being disposed adjacent the center of the walls and spaced apart the width of a mortar joint; a third web spaced from the center of the block approximately the width of the block less one half the width of a mortar joint; a fourth web spaced from the center of the block opposite the said third web approximately the width of the block less one half the width of a mortar joint; spaced ribs on one of said walls extending from top to bottom thereby to provide a plurality of transversely extending grooves; mortar bonding the confronting bearing surfaces of the blocks; said mortar forming a joint, on the wall having said ribs, equal to at least the width of the wall and the ribs; said mortar when applied having the usual liquid content so as to be readily workable by the brick mason; and said ribs being spaced from one another at such distance and the liquid absorbing characteristic of the block being such that mortar bridges the ends of the grooves when the mortar is applied in the usual manner.

5. A wall comprising stacked baked clay hollow building blocks, each of said blocks comprising spaced walls and interconnecting webs forming the hollow block, two of said webs forming ends of the blocks and an intermediate web extending from top to bottom of the walls and disposed closer to one of the end webs than the other and at such a distance from said other end web so that the width of the block plus the said distance and the thicknesses of the intermediate web and said other end web will equal one and one half the length of the block less one half a mortar joint; ribs on the inside of one of said walls extending from top to bottom of the wall to provide a plurality of transversely extending grooves; mortar bonding the confronting bearing surfaces of the blocks; said mortar forming a joint, on the wall having said ribs, equal to at least the width of the wall and the ribs; said mortar when applied having the usual liquid content so as to be readily workable by the brick mason; and said ribs being spaced from one another at such distance and the liquid absorbing characteristic of the block being such that mortar bridges the ends of the grooves when the mortar is applied in the usual manner.

6. A wall like that defined in claim 5 and including another intermediate web which is disposed a distance from said other end wall equal to the distance that the first mentioned intermediate web is disposed from said one end wall.

7. A wall like that defined in claim 5 and including a web interconnecting the end webs, said web being disposed intermediate the said spaced walls and extending substantially from top to bottom of the block.

8. A wall like that defined in claim 5 and including a web interconnecting the end webs, said web being disposed intermediate the said spaced walls and extending substantially from top to bottom of the block, the portion of the said web interconnecting the said one end web and the intermediate web being forked.

C. FORREST TEFFT.

CERTIFICATE OF CORRECTION.

Patent No. 2,198,399. April 23, 1940.

CHARLES FORREST TEFFT.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 1, second column, line 5, after the word and period "block." insert the following paragraph -

Figure 7 is a perspective view of a wall showing a method of laying the wall block. ;

and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 11th day of June, A. D. 1940.

(Seal)

Henry Van Arsdale,
Acting Commissioner of Patents.